

PATENT COOPERATION TREATY

HPT JLL

From the INTERNATIONAL SEARCHING AUTHORITY

To:
DAVID J. LEVY
GLAXOSMITHKLINE
CORPORATE INTELLECTUAL PROPERTY DEPARTMENT
FIVE MOORE DRIVE, PO BOX 13308
RESEARCH TRIANGLE PARK, NC 27709

PCT

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL SEARCH REPORT AND
THE WRITTEN OPINION OF THE INTERNATIONAL
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Date of mailing (day/month/year)	28 MAR 2005
Applicant's or agent's file reference PR60548WO	FOR FURTHER ACTION See paragraphs 1 and 4 below
International application No. PCT/US04/37027	International filing date (day/month/year) 05 November 2004 (05.11.2004)
Applicant SMITHKLINE BEECHAM CORPORATION	

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.
- Filing of amendments and statement under Article 19:
The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):
- When? The time limit for filing such amendments is normally two months from the date of transmittal of the international search report.
- Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes
1211 Geneva 20, Switzerland, Facsimile No.: +41 22 740 14 35
- For more detailed instructions, see the notes on the accompanying sheet.
2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) in that effect and the written opinion of the International Searching Authority are transmitted herewith.
3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.
- ☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.
4. Reminders
- Shortly after the expiration of 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.
- The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.
- Within 19 months from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later); otherwise, the applicant must, within 30 months from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.
- In respect of other designated Offices, the time limit of 30 months (or later) will apply even if no demand is filed within 19 months.
- See the Annex to Form PCT/ISA/220 and, for details about the applicable time limits, Office by Office, see the PCT Applicant's Guide, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1455
Alexandria, Virginia 22313-1455
Facsimile No. (703) 305-3230

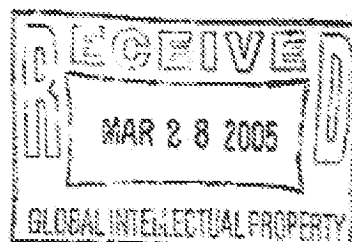
Authorized officer

Dwight C. Jones

Telephone No. (703) 308-1125

Form PCT/ISA/220 (January 2004)

(See notes on accompanying sheet)



PATENT COOPERATION TREATY

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PR00548W0	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, Item 5 below.	
International application No. PCT/US04/37027	International filing date (day/month/year) 05 November 2004 (05.11.2004)	(Earliest) Priority Date (day/month/year) 07 November 2003 (07.11.2003)
Applicant SMITHKLINE BEECHAM CORPORATION		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.



It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.



The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).



- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II)

3. ☐ Unity of invention is lacking (See Box No. III)

4. With regard to the title,



the text is approved as submitted by the applicant.



the text has been established by this Authority to read as follows:

5. With regard to the abstract,



the text is approved as submitted by the applicant.



the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

- a. the figure of the drawings to be published with the abstract is Figure No. _____



as suggested by the applicant.



as selected by this Authority, because the applicant failed to suggest a figure.



as selected by this Authority, because this figure better characterizes the invention.



- b. none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/37027

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : A61K 31/413, 31/333 US CL : 514/231.5, 394 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 514/231.5, 394 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched None Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claims No.
Y	Database CA on STN, GlaxoSmithKline, Department of Discovery Medicine, (Research Triangle Park, NC, USA), No. 138/280796, XIA, W. et al., "Anti-tumor activity of GW572016: a dual tyrosine kinase inhibitor blocks EGF activation of EGFR/erbB2 and downstream Erk1/2 and AKT pathways", abstract, Oncogene 21(41), p.6253-6263, 2002.	1-10
Y	WO 99/35146 A1 (CARTER et al.) 15 July 1999, see abstract and pages 1-15.	1-10
Y	Database CANCERLIT on STN, Department of Pharmaceutical Sciences, University of Maryland-School of Pharmacy, (Baltimore, MD, USA), No. 2002080317, CHEN, X. et al., "Constitutively active Akt is an important regulator of TRAIL sensitivity in prostate cancer", abstract, ONCOGENE, 20(42), pp. 6073-6083, Sep 20, 2001.	1-10
Y	Database CA on STN, Developmental Therapeutics Department, National Cancer Institute, (Bethesda, MD, USA), No. 135/205100, BROGNARD, J. et al., "Akt/protein kinase B is constitutively active in non-small cell lung cancer cells and promotes cellular survival and resistance to chemotherapy and radiation", abstract, Cancer Research 61(10), pp. 3986-3997, 2001.	1-10
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent published on or after the international filing date "T" document which may throw doubts on priority claim(s) or which is used to establish the publication date of another document or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is considered with one or more other such documents, such combination being obvious to a person skilled in the art "Z" document member of the same patent family		
Date of the actual completion of the international search 03 March 2005 (03.03.2005)		Date of mailing of the international search report 23 MAR 2005
Name and mailing address of the ISA/US Mail Stop BCT, Attn: ISA/US Commissioner for Patents P.O. Box 1430 Alexandria, Virginia 22313-1430 Facsimile No. (703) 305-3230		Authorized officer Dayne C. [Signature] Telephone No. (703) 308-1123 [Signature]

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US04/37027

Continuation of E. FIELDS SEARCHED Item 3:
REGISTRY, CA, USPATFILL, BIOSIS, MEDLINE, DRUGU, CANCERLIT chemical name search on REGISTRY with the
following terms: wormannin, ly 294002, gw 572016, eck(4a)inhibitor#, pi3k(4a)inhibitor#, akt(4a)inhibitor#